An Analysis of Commercial Risk Management: Valuing the Industry

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By

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Abstract

Financial markets have been at the forefront of media scrutiny since the fall of the banking sector in 2008. The resulting crash left many homeless, jobless, and with little hope for the future. The road to recovery has been long, but the markets have begun to bounce back following an historic collapse. The commercial risk management industry has borne much of the scrutiny as part of the financial services sector. For this project, I will take a sample of the financial services sector, the commercial risk management industry, and analyze the firms in that industry to determine the extent to which recovery has taken place, and the viability of the industry moving forward. Through an analysis of the industry, I conclude that the outlook for commercial insurers is positive for the next 12-24 months. This conclusion is derived from the use of ratio analysis and pricing models to determine a value for the industry.

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Introduction

Since the beginning of recovery following the financial crisis of 2008-2009, the United States has realized high rates of return on both the New York Stock Exchange and the NASDAQ. Over the past three years, financial services has seen blame heaped onto itself in the wake of the sub-prime mortgage fiasco that resulted in the financial downfall of Lehman Brothers, Bear Stearns, and Merrill Lynch, along with countless businesses that went under during the recession. Due to the magnitude and duration of this period of growth, it is pertinent to wonder if the growth that the economy in recent years is a true marker of economic recovery. Indeed, some have wondered whether or not there are other factors that have been driving the market.

The Federal Reserve has been actively involved in open market operations in order to keep interest rates artificially low, and this has led to speculation that the sustained growth of the U.S. markets over the course of the most recent bull market is due to forces other than the financial stability of the economy. Because rates on U.S. Treasury bills and corporate bonds have remained at historically low rates, many investors have chosen to invest in stock, rather than bonds. Indeed, Matthews (2013) states that, as of 2013, the Fed was still purchasing $85 billion in assets monthly in order to keep downward pressure on long-term rates. When interest rates begin to rise, it is possible that a market correction will follow. With markets growing at unprecedented rates, it is likely that a substantial correction will occur in the foreseeable future, though the magnitude and duration of the correction are unknown.

In the event of a significant downturn in the financial market, certain industries will surely suffer more than others. The commercial risk management industry is responsible for the

risk financing of thousands of firms across the world. The future viability of this industry will determine its willingness and ability to pay claims in a forthright and timely manner. Insurance plays a crucial role in the financial planning of many firms. This industry will serve as a representative of the larger financial services sector, to gauge the current health and future prospects of the industry, as well as the greater economic environment. This study will examine the legitimacy of some popular pricing models, as well as examining the changes in the firms' ability to pay claims over the past three years.

Firms and Procedure

In his article published nearly a year before the fall of the financial sector, Makin (2007) pointed to numerous factors, including credit overextension and derivative securities, predicting the coming economic collapse. The financial crisis has fallen on the shoulders of the financial services sector, as many mistakes made in this industry have had tremendous effects on the overall economic environment. Now, improvement appears to have taken place, as the financial indices close in on all-time highs, recovering all of the losses that were suffered in 2008-2009. The commercial risk management industry can offer insights into the real improvement of an industry of firms over the past three years. It is an industry represented by relatively few firms. For this reason, a representative sample has been chosen.

Many of the players in this industry are privately held, resulting in fewer firms that have stock data to analyze. Because the primary comparison that will be used is stock price, only publically traded companies will be analyzed. Using Bloomberg's equity screen function (2015) all firms that specialize in commercial property and casualty insurance were extracted. These firms have been sorted by market capitalization. Firms with a market capitalization of less than

$1 billion are generally considered micro-cap firms, and have been excluded because the pricing models that have been used tend to work better with firms that have larger amounts of analyst coverage.

For each of the firms, four different methods will be used to determine whether or not the industry can be expected to maintain its current growth pattern, or if the firms have become overvalued by the persistent bull market. Three common valuation methods have been applied: equity multiples, enterprise value multiples, and residual income, along with an analysis of the loss ratios that the firms have experienced between 2011 and 2013. A summary of each of the methods is listed below:

Equity Ratio Multiples

The multiples approach to investment valuation is based on the assumption that similar assets will sell at similar prices. Certain key statistics can be used to assign a valuation as expressed by the market value of the firm (Cooper, 2001, p. 3). This approach can be utilized with various accounting measures to determine an appropriate share price for a firm. In this case three accounting values for each firm have been extracted from Bloomberg, and multiplied by a competitor multiple to give an approximation of the intrinsic value of the security. Each firm is compared to its four closest competitors as indicated by Bloomberg's peer correlation matrix. This matrix uses metrics such as market capitalization, industry, revenue, and numerous other measures to determine the similarity of any two given firms.

Next, the target firm's current book value per share, as of December 2013, its trailing 12 month earnings per share, and the next year's projected earnings per share are input. These measures can all be derived from the firm's financial statements, which are stored in and

extracted from Bloomberg. Book value per share can be multiplied by the market-to-book ratio to calculate an estimated market value per share of the firm. Similarly, the two measures of earnings per share can be multiplied by the price-to-earnings ratio to calculate two more estimates of the appropriate stock price. In this case, the ratios for the four competing firms are averaged and used as a multiple. The competitor firms have an average value calculated using each firm's market-to-book ratio, trailing 12 month price-to-earnings ratio, and forward 12 months projected price-to-earnings ratio[1]. The average values are multiplied by the target firm's accounting numbers to give an approximate market value of the firm, as illustrated in Appendix B. An example of this procedure is indicated below. The example is Allstate, taken from figure 1-1 in Appendix B.

Figure 1: Market Multiples

	Torchmark	Chubb	ACE	Berkshire Hathaway	Average
M/B Ratio	$ 1.85	$ 1.49	$ 1.22	$ 1.32	$ 1.47
P/E Trailing	$ 9.87	$ 14.40	$ 10.43	$ 17.57	$ 13.07
P/E Forward	$ 13.72	$ 12.03	$ 11.07	$ 19.31	$ 14.03

	Allstate	Multiplier	Valuation
Book Value	$ 49.67	$ 1.47	$ 73.04
Trailing EPS	$ 5.79	$ 13.07	$ 75.65
Forward EPS	$ 5.69	$ 14.03	$ 79.87
Valued Price (Average)			**$ 76.19**

As shown in the table, Allstate's four competitors (according to Bloomberg) are listed across the top, with each competitor in a column. For each of these companies, three ratios have been pulled from Bloomberg's databases. The first two rows are simply accounting measures. The forward P/E is an estimate by Bloomberg analysts for the next 12 months. The average of each row is in the last column. These averages are transferred to the bottom of the table, and multiplied by the accounting values and estimates that are listed for Allstate. Each multiple is calculated and then averaged to reach the final valued price in the final row.

[1] There are numerous different metrics that can be used to calculate equity multipliers. The ones chosen are used by the Ball State Finance department for the purpose of securities valuation.

Enterprise Value Multiples

In addition to using accounting ratios to estimate the value of equity, it is possible to estimate the value of the entire firm, and then express that value as a price per share of stock. According to Cooper (2001) the enterprise model, rather than simply representing the shareholders claims on a business, attempts to express the value of all claims on the business (p. 3). This approach will approximate the market value of the assets owned by each firm, through a numerical estimation of these claims.

In this approach, just as with the equity multiples approach, the firm is valued based on four competitors. In this case, the enterprise value (EV) of each firm is divided by its current earnings before interest, taxes, depreciation, and amortization (EBITDA). This gives a ratio (EV/EBITDA) with which we can estimate the firm's expected market capitalization. This ratio is multiplied by the target firm's EBITDA to estimate the market capitalization of the firm. By adding cash and subtracting preferred equity, minority interest, and total debt, we arrive at an estimated market value of all of the firm's assets (Enterprise value based on competitors). By dividing this estimate by the firm's shares outstanding, we arrive at an approximation of an appropriate stock price. This procedure is demonstrated below, again using Allstate as an example (Figure 1-2 in Appendix B).

In this case, the competitors are listed along the top in columns, just as they were in the previous example. This time, the ratio must be calculated by dividing the first row by the second to compute the EV/EBITDA which is listed in the third row. This value is multiplied by Allstate's EBITDA to calculate its expected market capitalization. After this, cash is added, and preferred equity, minority interest, and total debt are subtracted to calculate an intrinsic market

value of the firm's assets (EV based on competition). This value can be divided by total shares outstanding for Allstate to arrive at a projected share price.

Figure 2: Enterprise Value Multiples

	Torchmark	Chubb	ACE	Berkshire Hathaway	Average
EV	$ 8,177.54	$ 27,241.86	$ 40,616.87	$ 143,275.42	
EBITDA	$ 843.59	$ 3,450.00	$ 4,513.00	$ 31,087.00	
EV/EBITDA	9.69	7.90	9.00	4.61	7.80
EBITDA Allstate	$ 3,117.76				
EV Based on Competition	$ 9.36				
Expected Market Cap (EV*EBITDA)	$ 29,186.99				
ADD: Cash	$ 675.00				
LESS: Preferred Equity	$ 807.50				
LESS: Minority Interest	$ -				
LESS: Total Debt	$ 6,201.00				
EV based on competition	**$ 22,853.49**				
Shares Outstanding	416				
Price	**$ 54.88**				

Residual Income

Residual income valuation represents a method of comparing the book value of common equity to its market value. To do this, book value is values that affects share price, such as earnings per share. In addition, firms have information that is relevant to the value of their company, but is not well represented by financial statements. In light of this, various models exist that attempt to capture this value. For the purpose of this paper, we will use a model that predicts this value as a multiple based on the GICS sector in which the firms operate. Since all firms analyzed are commercial insurers, they all fall into the financial services sector.

For the purposes of calculating a share price, book value per share, earnings per share, cost of equity, and a regression model will be used. The regression model predicts a coefficient for the abnormal excess return (AER) based on the past 20 years of data collected and sorted by sector[1]. The AER for a given year is calculated by taking the projected earnings per share in the following year (EPS_1), and subtracting the book value per share ($BVPS_0$) multiplied by cost of

equity (k_e). This procedure is repeated for the following year based on Bloomberg projected earnings and book value. The resulting two AER estimates are discounted to the current year and added together to get a two year estimate of abnormal excess return. We then input the current book value per share and AER into the formula with coefficients based on the regression model to arrive at a valuation of fair market value[2]. This procedure is illustrated below, using Allstate as an example (Figure 1-3 in Appendix B).

Figure 3: Residual Income

T=1		T=2		Discounted AER1	1.53
EPS1	$ 5.36	EPS2	$ 5.71	ADD: Discounted AER2	1.35
BVPS0	$ 44.53	BVPS1	$ 49.67	AER(2)	2.87
Ke	8.31%	Ke	8.31%		
AER1	1.652873236	AER2	1.579212332		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 68.02**		

For this calculation, the EPS has been projected for the next 2 fiscal years based on Bloomberg analyst's projections. Current book value per share and a 12 month projection have also been used. The first column is a calculation of the firm's abnormal excess return (AER) for the current year. The second column is the same calculation, but for a projected AER in the following year. These have each been discounted to the current time, using the firms cost of equity (K_e). The full equation used for the price calculation can be found in Appendix C.

Loss Ratio

Loss ratio is a metric which insurance companies frequently use to summarize loss experience in a given year. Like other financial ratios, different metrics can be used, depending on the intended user. Medical loss ratio, for example, would be a specifically defined loss ratio,

[2] The regression that was used to calculate the coefficients for residual income calculation is illustrated in Appendix C. It is used by the Ball State Finance Department and the Student Managed Investment Fund. Any questions can be directed to Dr. Kristopher Kemper at Ball State.

primarily for use among the major health insurance firms. According to Bugg (1998), "the National Association of Insurance Commissioners' (NAIC's) annual statement blank defines loss ratio as 'a measure of the relationship between A & H (accident and health) claims and premiums'" (p. 2). Changes in loss ratio are changes in the claims experience of the firm. Firms that have better than expected claims experience can be expected to report higher earnings per share, which theoretically would result in rising stock price.

For the purposes of this study, loss ratio has been calculated based on each insurance company's income statements from 2011-2013, as reported to the Securities and Exchange Commission. Company income statements are charted in Appendix B. In each case, the loss ratio has been calculated simply by dividing claims and claims adjustment expenses by premiums collected. Some firms write life insurance and annuities as well, so these policy benefits and premiums were also used in calculations if applicable. Rather than using the loss ratio to attempt to derive an estimate of share price, it will simply be compared to changes in price over the same time span to see if trends emerge.

Benefits of Pricing Models

Pricing models have numerous benefits, making them attractive for use by all types of investors. Some of these benefits are outlined by Cooper (2001) and are as follows:

1) Decision making: pricing models allow the analyst to take raw data and use it to make decisions regarding valuation and investment. Though no pricing model creates a prefect snapshot of accounting data, they provide the analyst with a starting point to begin to conceptualize data and make judgments.

2) Comparability: Because these models are based primarily upon the accounting data that is reported to the public, firms may be easily compared to one another. Additionally, many investors use basic accounting standards (such as earnings per share and accounting ratios) to make decisions. These investors, as a group, are typically responsible for movement in the market. Because of this, multiples models in particular are highly relevant with regard to market movement.
3) Simplicity: These models (with the potential exception of the residual income model) are quite simplistic with regard to how the valuation is calculated. This reduces potential over-analysis that can muddle conclusions that are drawn.

Limitations of Pricing Models

Just as the pricing models have numerous benefits, they are subject to potential drawbacks. Each of the aforementioned models is based on calculations derived from accounting data and forecasts from Bloomberg. Some of the limitations of these models are also discussed by Cooper (2001) and include:

1) Overly simplistic data: Efficient market theory suggests that, assuming all investors have equal access to information, any unexploited gains that can be realized through examination of financial statements have already been realized. Because of this, pricing models that primarily use accounting data may oversimplify the value of a firm with only a few metrics.
2) Error in projections: All projections are subject to error. Equity multiples models, in particular, rely on accurate earnings estimates to measure stock value. Since these forecasts vary among different ratings agencies, fair price prediction depends upon the projections that are used in valuation.

3) Comparability: Though this may be considered a benefit in some regards, valuation models are subject to various factors, including accounting conventions, which may make data difficult to relate among firms, particularly those that are dissimilar. Firms that amortize and depreciate differently could have different reported incomes, all other factors held constant. In addition, firms of substantially greater size may lack similarity to smaller firms, and thus, comparability.

Analysis

All income statements are listed in alphabetical order in Appendix A. The pricing models for each firm, also in alphabetical order, are listed in Appendix B. The data indicate that the majority of the 17 firms that were analyzed are overvalued with respect to their current share prices. For each firm, the mean and median valued price was calculated based on the results of the three pricing models. The following is a summarized table, illustrating these results.

Figure 1

Company	Market Multiples	Enterprise Value	Residual Income	Mean	Median	Year End Price (2013)	Value to Median
Allstate	$ 75.56	$ 54.88	$ 66.99	$ 65.81	$ 66.99	$ 54.54	23%
American Financial	$ 64.33	$ 92.01	$ 59.69	$ 72.01	$ 64.33	$ 57.72	11%
Amtrust Financial	$ 102.94	$ 54.88	$ 8.48	$ 55.43	$ 54.88	$ 32.69	68%
Chubb	$ 98.75	$ 120.54	$ 89.83	$ 103.04	$ 98.75	$ 96.63	2%
Cincinnati	$ 41.67	$ 39.44	$ 33.60	$ 38.24	$ 39.44	$ 52.37	-25%
First American	$ 39.40	$ 85.36	$ 30.36	$ 51.71	$ 39.40	$ 28.20	40%
Hanover Insurance	$ 77.59	$ 78.21	$ 61.34	$ 72.38	$ 77.59	$ 59.71	30%
HCC Insurance	$ 60.71	$ 53.28	$ 59.69	$ 57.89	$ 59.69	$ 46.14	29%
Loews	$ 43.46	$ 10.08	$ 36.06	$ 29.87	$ 36.06	$ 48.24	-25%
Markel	$ 458.32	$ 312.57	$ 289.62	$ 353.50	$ 312.57	$ 557.73	-44%
OneBeacon Insurance	$ 14.09	$ 78.74	$ 16.51	$ 36.45	$ 16.51	$ 15.81	4%
ProAssurance	$ 64.16	$ 61.04	$ 42.52	$ 55.91	$ 61.04	$ 48.48	26%
Progressive	$ 20.79	$ 20.13	$ 23.54	$ 21.49	$ 20.79	$ 27.27	-24%
RLI Corp.	$ 38.62	$ 42.73	$ 26.70	$ 36.02	$ 38.62	$ 48.69	-21%
Selective Insurance	$ 31.58	$ 20.68	$ 31.86	$ 28.04	$ 31.58	$ 27.06	17%
Travelers	$ 132.67	$ 131.63	$ 110.01	$ 124.77	$ 131.63	$ 90.54	45%
WR Berkley	$ 45.27	$ 46.39	$ 45.93	$ 45.86	$ 45.93	$ 43.39	6%

The mean and median are both listed, however, the median of the three pricing models has been chosen in lieu of the mean for comparisons because, in several cases, one of the pricing

models yielded a value that was substantially higher than the other two models. Because there are only three values with which to find an average, the median is preferable because it is less influenced by outliers. Of the 17 firms that were analyzed, 12 of them had median valuations that were higher than their share price at the end of 2013. The other 5 were valued below their current share price. For the purposes of simplicity, the firms that had higher median valuations than their 2013 share price will be considered "undervalued." The rest will be considered "overvalued." Though these are subjective terms, their use will simplify the process of referring to them as a group.

The value compared to the median computed with a simple growth formula, the same that has been used to calculate the growth (or loss) in company share price over the past 3 years. In aggregate, the median difference in the price at the end of 2013 is 10%, meaning that the firms, on average, are undervalued by 10% according to the three pricing models. However, there is a wide range of overvaluation and undervaluation among the firms analyzed. The standard deviation was calculated as 29%, indicating high variability among the firms in the sample. The loss ratio data has also been collected and analyzed compared to stock price as shown in figure 2 below:

Figure 2

Company	Price (2011)	Price (2012)	Price (2013)	Change	Loss Ratio 2011	Loss Ratio 2012	Loss Ratio 2013	L/R Change
Allstate	$ 27.41	$ 42.20	$ 54.54	98.98%	0.777927608	0.700600456	0.661594928	-15%
American Financial	$ 36.89	$ 40.84	$ 57.72	56.47%	0.819692694	0.875197472	0.823086197	0%
Amtrust Financial	$ 19.63	$ 26.08	$ 32.69	66.53%	0.531360327	0.559863037	0.59140857	11%
Chubb	$ 69.22	$ 78.06	$ 96.63	39.60%	0.636121608	0.634144281	0.540361346	-15%
Cincinnati	$ 30.46	$ 40.34	$ 52.37	71.93%	0.790231684	0.659284497	0.641978473	-19%
First American	$ 12.67	$ 25.11	$ 28.20	122.57%	0.257093326	0.194793167	0.242785416	-6%
Hanover Insurance	$ 34.95	$ 39.77	$ 59.71	70.84%	0.708831212	0.701658371	0.620402202	-12%
HCC Insurance	$ 27.50	$ 38.55	$ 46.14	67.78%	0.657797449	0.582135221	0.576110645	-12%
Loews	$ 37.65	$ 42.06	$ 48.24	28.13%	0.831288808	0.856727695	0.817906753	-2%
Markel	$ 414.67	$ 447.50	$ 557.73	34.50%	0.61130781	0.537493806	0.562032432	-8%
OneBeacon Insurance	$ 15.39	$ 14.77	$ 15.81	2.73%	0.541691365	0.574204947	0.555248126	3%
ProAssurance	$ 39.91	$ 43.89	$ 48.48	21.47%	0.267538003	0.293692706	0.4603263	72%
Progressive	$ 19.51	$ 22.27	$ 27.27	39.77%	0.713610865	0.74591085	0.729235123	2%
RLI Corp.	$ 36.43	$ 47.76	$ 48.69	33.65%	0.371591154	0.471138854	0.411858238	11%
Selective Insurance	$ 17.73	$ 19.27	$ 27.06	52.62%	0.746875072	0.707642545	0.646135644	-13%
Travelers	$ 59.17	$ 74.06	$ 90.54	53.02%	0.736803984	0.656438699	0.587842912	-20%
WR Berkley	$ 34.39	$ 39.04	$ 43.39	26.17%	0.610085033	0.601909876	0.581258808	-5%

The prices for all three years of stock information were quoted as of the final day of the year. Of the 17 firms, 12 saw a reduction in their loss ratio over the three year period from 2011-2013. While it seems noteworthy that several of the firms that were undervalued as indicated by the pricing models also saw reductions in their loss ratios over the past three years, a simple linear regression suggests no correlation between the two (R^2=.01). The change in loss ratio over a three year period was similarly uncorrelated with changes in share price (R^2=.14). The median change in loss ratio among the 17 firms was -6%.

As with the data collected from the pricing models, the loss ratio data had high variability. In this case, the standard deviation was 21%. These firms, though they are all in the same industry, have different operations, business models, and target markets. For example, Travelers is the industry leader and on the Dow Jones Industrial Average. The firm, according to its website, writes numerous different lines of business, including auto, home, renters, umbrella, and yacht insurance (Travelers 2015). ProAssurance, on the other hand, writes primarily medical malpractice insurance for physicians and dentists, according to its website (ProAssurance 2015). These differences not only account for the difference in loss ratio, but also in the pricing model. The competitors used in the analysis are as different from each other as the firms themselves.

In short, pricing models indicate that the majority of the firms in the commercial risk management industry remain undervalued, despite periods of significant stock price growth over the past three years. In addition, loss ratios, on average, have shown improvement. In some cases, such as industry leaders Allstate and Travelers, the firms are both substantially undervalued, as well as improving substantially in terms of loss ratio. No correlation can be drawn between the two, however.

Conclusions

Clearly, the pricing models approach has vouched for the viability of commercial risk management moving forward. In a period of transition in the stock market, large growth over a multi-year period can make many investors uneasy. Market correction is the kneejerk reaction to sustained growth, as market increases of 20% each year are unsustainable. Financial services were hit particularly hard during the 2007-2009 downturn, as a result of the housing bubble burst. An examination of the current financial situations of the top sample of the commercial risk management industry suggests that there is no reason to believe that the industry will suffer a substantial reduction in market value in the near future. While there are inherent problems with the pricing models that were used to analyze the firms, a trend has become apparent when analyzing these firms: they are, as a whole, doing well despite an economic climate that is still recovering from the recent recession.

Improving loss ratios indicate a potential reason that the industry has been improving over the past several years. Claims experience has a tremendous impact on the bottom line of insurance companies. Though an insurance company should be sufficiently able to predict losses over the long-run, claims in a given year are subject to higher degrees of fluctuation. Because of this, loss ratio helps explain why a firm has improved net income over a period of years. In general, the firms examined have seen their claims experience reduced over the past few years. There is no correlation between the claims experience and growth rate; therefore, loss ratio may not be useful in predicting future growth opportunities. On the other hand, it may be useful in explaining why insurance companies are reporting higher earnings from year to year.

The results of these data are indicative that the bull market may not be over for the commercial insurance industry, and perhaps the entire market. Loss ratios have reduced, leaving firms with higher net income reported to their shareholders over the past three years. These accounting numbers have also been input to compute valuations through pricing models, which indicate that the firms are doing well relative to their current share price. Though not all of the firms that have been analyzed have shown improvements in these areas, the average firm among the sample is both improving its loss ratio and undervalued relative to its current market price. As a result, it is expected that these firms will continue to show positive growth opportunities over the next 12-24 months.

Further Research

Further research should be conducted to determine if pricing models are appropriate for pricing securities in the commercial insurance industry in the future. The data that has been collected should be reinvestigated to determine if there is a lagging correlation. Do the pricing models accurately predict changes in stock price for the next 12 months? This data is needed in order to determine how well pricing models apply to the commercial risk management industry. Other pricing models should also be investigated. The insurance industry is unique because it does not allow for other popular pricing models, such as the dividend growth model, to be used due to the fact that many insurance companies do not pay dividends. Whether or not this plays a significant factor for this particular industry should be examined in future research.

Loss ratio should also be compared to combined ratio in future research to determine which ratio is more applicable to investment decisions. Some investors might prefer to use the combined ratio, because it gives an idea of how well a firm manages its total expenses, not just

its claims. However, in the case of managing total expenses, there are other ratios that could be used as well, such as gross margin. For the purposes of this examination, the loss ratio was used as an attempt to understand how changing claims experience can affect growth opportunities. This correlation should be investigated with regard to growth in share price over the next 12 months, in case share price lags the changes in this ratio.

Future research should also investigate whether or not loss ratio and valuation models can be used in conjunction with each other for decision making purposes. Would investors have an advantage over the market if they combined the two processes in order to decide which securities to purchase? Of the firms that were examined, eight of them were both considered undervalued and had loss ratio reduction over the past three years. Future research should investigate whether these securities would outperform their peer over the next 12-24 months. If it is possible to tie loss ratio to valuation models for use in future decision making, analysts could substantially rethink the way the commercial insurance industry is evaluated for years to come.

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Appendix A: Income Statements

Section 1: Allstate

Figure 1: Income Statement			
CONSOLIDATED STATEMENTS OF OPERATIONS (US	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	**Dec. 31, 2013**	**Dec. 31, 2012**	**Dec. 31, 2011**
Revenues			
Property-liability insurance premiums (net of reinsurance ceded	$ 27,618.00	$ 26,737.00	$ 25,942.00
Life and annuity premiums and contract charges (net of reinsura	$ 2,352.00	$ 2,241.00	$ 2,238.00
Net investment income	$ 3,943.00	$ 4,010.00	$ 3,971.00
Realized capital gains and losses:			
Total other-than-temporary impairment losses	$ (207.00)	$ (239.00)	$ (563.00)
Portion of loss recognized in other comprehensive income	$ (8.00)	$ 6.00	$ (33.00)
Net other-than-temporary impairment losses recognized in earn	$ (215.00)	$ (233.00)	$ (596.00)
Sales and other realized capital gains and losses	$ 809.00	$ 560.00	$ 1,099.00
Total realized capital gains and losses	$ 594.00	$ 327.00	$ 503.00
Total revenues	$ 34,507.00	$ 33,315.00	$ 32,654.00
Costs and expenses			
Property-liability insurance claims and claims expense (net of re	$ 17,911.00	$ 18,484.00	$ 20,161.00
Life and annuity contract benefits (net of reinsurance ceded of $	$ 1,917.00	$ 1,818.00	$ 1,761.00
Interest credited to contractholder funds (net of reinsurance ced	$ 1,278.00	$ 1,316.00	$ 1,645.00
Amortization of deferred policy acquisition costs	$ 4,002.00	$ 3,884.00	$ 3,971.00
Operating costs and expenses	$ 4,387.00	$ 4,118.00	$ 3,739.00
Restructuring and related charges	$ 70.00	$ 34.00	$ 44.00
Loss on extinguishment of debt	$ 491.00		
Interest expense	$ 367.00	$ 373.00	$ 367.00
Total costs and expenses	$ 30,423.00	$ 30,027.00	$ 31,688.00
(Loss) gain on disposition of operations	$ (688.00)	$ 18.00	$ (7.00)
Loss Ratio	**0.662**	**0.701**	**0.778**
Income from operations before income tax expense	$ 3,396.00	$ 3,306.00	$ 959.00
Income tax expense	$ 1,116.00	$ 1,000.00	$ 172.00
Net income	$ 2,280.00	$ 2,306.00	$ 787.00

Section 2: American Financial Group

Figure 1: Income Statement			
Consolidated Statement of Earnings (USD $)	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues:			
Property and casualty insurance net earned premiums	$ 3,204.00	$ 2,847.00	$ 2,759.00
Life, accident and health net earned premiums	$ 114.00	$ 318.00	$ 430.00
Net investment income	$ 1,346.00	$ 1,301.00	$ 1,225.00
Realized gains (losses) on:			
Securities	$ 221.00	$ 210.00	$ 76.00
Subsidiaries	$ (4.00)	$ 161.00	$ (3.00)
Income (loss) of managed investment entities:			
Investment income	$ 128.00	$ 125.00	$ 105.00
Loss on change in fair value of assets/liabilities	$ (14.00)	$ (94.00)	$ (33.00)
Other income	$ 97.00	$ 89.00	$ 84.00
Total revenues	$ 5,092.00	$ 4,957.00	$ 4,643.00
Costs and Expenses:			
Property and casualty insurance: Losses and loss adjustment expenses	$ 2,040.00	$ 1,873.00	$ 1,744.00
Property and casualty insurance: Commissions and other underwriting expenses	$ 1,019.00	$ 887.00	$ 835.00
Annuity benefits	$ 531.00	$ 541.00	$ 510.00
Life, accident and health benefits	$ 160.00	$ 356.00	$ 360.00
Annuity and supplemental insurance acquisition expenses	$ 167.00	$ 282.00	$ 195.00
Interest charges on borrowed money	$ 71.00	$ 75.00	$ 74.00
Expenses of managed investment entities	$ 89.00	$ 80.00	$ 71.00
Other expenses	$ 326.00	$ 326.00	$ 296.00
Total costs and expenses	$ 4,403.00	$ 4,420.00	$ 4,085.00
Loss Ratio	**0.823**	**0.875**	**0.820**
Earnings before income taxes	$ 689.00	$ 537.00	$ 558.00
Provision for income taxes	$ 236.00	$ 135.00	$ 239.00
Net earnings, including noncontrolling interests	$ 453.00	$ 402.00	$ 319.00
Less: Net earnings (loss) attributable to noncontrolling interests	$ (18.00)	$ (86.00)	$ (23.00)
Net Earnings Attributable to Shareholders	$ 471.00	$ 488.00	$ 342.00

Section 3: Amtrust Financial

Figure 1: Income Statement			
Condensed Consolidated Statements of Income (USD $)	12 Months Ended		
In Thousands, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 201	Dec. 31, 201
Premium income:			
Net written premium	$2,565,673	$1,648,037	$1,276,597
Change in unearned premium	-299,683	-229,185	-239,736
Net earned premium	2,265,990	1,418,852	1,036,861
Service and fee income (related parties – $51,545, $29,041, and $16,700)	331,559	172,174	108,660
Net investment income	84,819	68,167	55,515
Net realized gain on investments	15,527	8,981	2,768
Total revenues	2,697,895	1,668,174	1,203,804
Expenses:			
Loss and loss adjustment expense	1,517,361	922,675	678,333
Acquisition costs and other underwriting expenses	533,162	356,005	271,367
Other	291,617	177,709	117,090
Total expenses	2,342,140	1,456,389	1,066,790
Loss Ratio	**0.591**	**0.560**	**0.531**
Income before other income (expense), income taxes and equity in earnings of	355,755	211,785	137,014
Other income (expenses):			
Interest expense	-34,691	-28,508	-16,079
Gain on investment in life settlement contracts net of profit commission	3,800	13,822	46,892
Foreign currency loss	-6,533	-242	-2,418
Acquisition gain on purchase	57,352	0	5,850
Total other income (expenses)	19,928	-14,928	34,245
Income before income taxes and equity in earnings of unconsolidated subsidiar	375,683	196,857	171,259
Provision (benefit) for income taxes	98,019	21,292	-15,023
Income before equity in earnings of unconsolidated subsidiaries	277,664	175,565	186,282
Equity in earnings of unconsolidated subsidiary – related party	11,566	9,295	4,882
Net income	289,230	184,860	191,164
Net loss (income) attributable to non-controlling interests of subsidiaries	1,633	-6,873	-20,730
Net income attributable to AmTrust Financial Services, Inc.	290,863	177,987	170,434

Section 4: Chubb

Figure1: Income Statement			
Consolidated Statements of Income (USD $)	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues			
Premiums Earned	$ 12,066.00	$ 11,838.00	$ 11,644.00
Investment Income	$ 1,465.00	$ 1,556.00	$ 1,644.00
Other Revenues	$ 14.00	$ 8.00	$ 9.00
Realized Investment Gains (Losses), Net			
Total Other-Than-Temporary Impairment Losses on Investment	$ (11.00)	$ (40.00)	$ (22.00)
Other-Than-Temporary Impairment Losses on Investments		$ (5.00)	$ (1.00)
Other Realized Investment Gains, Net	$ 413.00	$ 238.00	$ 311.00
Total Realized Investment Gains, Net	$ 402.00	$ 193.00	$ 288.00
TOTAL REVENUES	$ 13,947.00	$ 13,595.00	$ 13,585.00
Losses and Expenses			
Losses and Loss Expenses	$ 6,520.00	$ 7,507.00	$ 7,407.00
Amortization of Deferred Policy Acquisition Costs	$ 2,454.00	$ 2,411.00	$ 2,330.00
Other Insurance Operating Costs and Expenses	$ 1,411.00	$ 1,362.00	$ 1,312.00
Investment Expenses	$ 49.00	$ 38.00	$ 39.00
Other Expenses	$ 22.00	$ 11.00	$ 11.00
Corporate Expenses	$ 254.00	$ 270.00	$ 287.00
TOTAL LOSSES AND EXPENSES	$ 10,710.00	$ 11,599.00	$ 11,386.00
Loss Ratio	**0.540**	**0.634**	**0.636**
INCOME BEFORE FEDERAL AND FOREIGN INCOME T	$ 3,237.00	$ 1,996.00	$ 2,199.00
Federal and Foreign Income Tax	$ 892.00	$ 451.00	$ 521.00
NET INCOME	$ 2,345.00	$ 1,545.00	$ 1,678.00

Section 5: Cincinnati Financial

Figure 1: Income Statement			
Consolidated Statements Of Income (USD $)	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
REVENUES			
Earned premiums	$ 3,902.00	$ 3,522.00	$ 3,194.00
Investment income, net of expenses	$ 529.00	$ 531.00	$ 525.00
Total realized investment gains (losses), net	$ 83.00	$ 42.00	$ 70.00
Fee revenues	$ 8.00	$ 6.00	$ 4.00
Other revenues	$ 9.00	$ 10.00	$ 10.00
Total revenues	$ 4,531.00	$ 4,111.00	$ 3,803.00
BENEFITS AND EXPENSES			
Insurance losses and policyholder benefits	$ 2,505.00	$ 2,322.00	$ 2,524.00
Underwriting, acquisition and insurance expenses	$ 1,243.00	$ 1,155.00	$ 1,039.00
Interest expense	$ 54.00	$ 54.00	$ 54.00
Other operating expenses	$ 15.00	$ 14.00	$ 13.00
Total benefits and expenses	$ 3,817.00	$ 3,545.00	$ 3,630.00
Loss Ratio	**0.642**	**0.659**	**0.790**
Income (loss) before income taxes	$ 714.00	$ 566.00	$ 173.00
PROVISION (BENEFIT) FOR INCOME TAXES			
Current	$ 178.00	$ 119.00	$ 27.00
Deferred	$ 19.00	$ 26.00	$ (18.00)
Total provision for income taxes	$ 197.00	$ 145.00	$ 9.00
NET INCOME	$ 517.00	$ 421.00	$ 164.00

Section 6: First American Financial

Figure 1: Income Statement			
Consolidated Statements Of Income (USD $)	12 Months Ended		
In Thousands, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues:			
Direct premiums and escrow fees	$ 2,184,464.00	$ 2,041,740.00	$ 1,634,177.00
Agent premiums	$ 2,044,862.00	$ 1,709,905.00	$ 1,491,943.00
Information and other	$ 627,645.00	$ 645,023.00	$ 621,483.00
Investment income	$ 89,895.00	$ 81,031.00	$ 76,771.00
Net realized investment gains	$ 9,211.00	$ 67,686.00	$ 5,268.00
Net other-than-temporary impairment			
Net OTTI losses recognized in earnings		$ (3,564.00)	$ (9,068.00)
Total revenues	$ 4,956,077.00	$ 4,541,821.00	$ 3,820,574.00
Expenses:			
Personnel costs	$ 1,445,582.00	$ 1,334,866.00	$ 1,178,368.00
Premiums retained by agents	$ 1,636,694.00	$ 1,370,193.00	$ 1,195,282.00
Other operating expenses	$ 885,805.00	$ 836,319.00	$ 761,878.00
Provision for policy losses and other claims	$ 530,356.00	$ 397,717.00	$ 420,136.00
Depreciation and amortization	$ 74,916.00	$ 74,950.00	$ 76,889.00
Premium taxes	$ 56,715.00	$ 51,304.00	$ 45,663.00
Interest	$ 15,301.00	$ 9,066.00	$ 12,065.00
Total expenses	$ 4,645,369.00	$ 4,074,415.00	$ 3,690,281.00
Loss Ratio	0.243	0.195	0.257
Income before income taxes	$ 310,708.00	$ 467,406.00	$ 130,293.00
Income taxes	$ 123,644.00	$ 165,678.00	$ 51,714.00
Net income	$ 187,064.00	$ 301,728.00	$ 78,579.00

Section 7: Hanover

Figure 1: Income Statement			
Consolidated Statements of Income (USD $)	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues			
Premiums	$ 4,450.50	$ 4,239.10	$ 3,598.60
Net investment income	$ 269.00	$ 276.60	$ 258.20
Net realized investment gains (losses):			
Net realized gains from sales and other	$ 39.50	$ 31.40	$ 35.00
Net other-than-temporary impairment losses on investments rec	$ (6.00)	$ (7.80)	$ (6.90)
Total net realized investment gains	$ 33.50	$ 23.60	$ 28.10
Fees and other income	$ 40.70	$ 51.40	$ 46.70
Total revenues	$ 4,793.70	$ 4,590.70	$ 3,931.60
Losses and expenses			
Losses and loss adjustment expenses	$ 2,761.10	$ 2,974.40	$ 2,550.80
Amortization of deferred acquisition costs	$ 971.00	$ 938.10	$ 778.90
Interest expense	$ 65.30	$ 61.90	$ 55.00
Other operating expenses	$ 667.20	$ 587.60	$ 525.30
Total expenses	$ 4,464.60	$ 4,562.00	$ 3,910.00
Loss Ratio	0.620	0.702	0.709
Income before income taxes	$ 329.10	$ 28.70	$ 21.60
Income tax expense (benefit):			
Current	$ 8.60	$ 18.40	$ (0.60)
Deferred	$ 74.80	$ (35.80)	$ (9.30)
Total income tax expense (benefit)	$ 83.40	$ (17.40)	$ (9.90)
Income from continuing operations	$ 245.70	$ 46.10	$ 31.50
Net gain from discontinued operations	$ 5.30	$ 9.80	$ 5.20
Net income	$ 251.00	$ 55.90	$ 36.70

Section 8: HCC Insurance Group

Figure 1: Income Statement			
Consolidated Statement of Earnings (USD $)	12 Months Ended		
In Thousands, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
REVENUE			
Net earned premium	$ 2,239,240.00	$ 2,242,625.00	$ 2,127,170.00
Net investment income	$ 220,182.00	$ 222,634.00	$ 212,271.00
Other operating income	$ 35,452.00	$ 30,448.00	$ 35,590.00
Net realized investment gain	$ 42,030.00	$ 31,148.00	$ 3,653.00
Other-than-temporary impairment credit losses	$ -	$ (1,028.00)	$ (4,679.00)
Total revenue	$ 2,536,904.00	$ 2,525,827.00	$ 2,374,005.00
EXPENSE			
Loss and LAE expense	$ 1,290,050.00	$ 1,305,511.00	$ 1,399,247.00
Policy acquisition costs, net	$ 279,439.00	$ 281,201.00	$ 266,125.00
Other operating expense	$ 368,495.00	$ 359,060.00	$ 330,557.00
Interest expense	$ 26,210.00	$ 25,628.00	$ 23,070.00
Total expense	$ 1,964,194.00	$ 1,971,400.00	$ 2,018,999.00
Loss Ratio	0.576	0.582	0.658
Earnings before income taxes	$ 572,710.00	$ 554,427.00	$ 355,006.00
Income tax expense	$ 165,513.00	$ 163,187.00	$ 99,763.00
Net earnings	$ 407,197.00	$ 391,240.00	$ 255,243.00

Section 9: Loews

Figure 1: Income Statement			
Consolidated Statements of Income (USD $)	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues:			
Insurance premiums	$7,271	$6,882	$6,603
Net investment income	$2,593	$2,349	$2,063
Investment gains (losses):			
Other-than-temporary impairment losses	($76)	($129)	($175)
Portion of other-than-temporary impairment losses recognized i	($2)	($25)	($41)
Net impairment losses recognized in earnings	($78)	($154)	($216)
Other net investment gains	$104	$211	$164
Total investment gains (losses)	$26	$57	($52)
Contract drilling revenues	$2,844	$2,936	$3,254
Other	$2,319	$2,328	$2,261
Total	$15,053	$14,552	$14,129
Expenses:			
Insurance claims and policyholders' benefits	$5,947	$5,896	$5,489
Amortization of deferred acquisition costs	$1,362	$1,274	$1,176
Contract drilling expenses	$1,573	$1,537	$1,549
Other operating expenses (Note 7)	$3,664	$4,006	$3,167
Impairment of goodwill	$636		
Interest	$442	$440	$522
Total	$13,624	$13,153	$11,903
Loss Ratio	0.818	0.857	0.831
Income before income tax	$1,429	$1,399	$2,226
Income tax expense	($360)	($289)	($532)
Net income	$1,069	$1,110	$1,694

Section 10: Markel

Figure 1: Income Statement			
Consolidated Statements Of Income And Comprehensive Income (	12 Months Ended		
In Thousands, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
OPERATING REVENUES			
Earned premiums	$ 3,231,616.00	$ 2,147,128.00	$ 1,979,340.00
Net investment income	$ 317,373.00	$ 282,107.00	$ 263,676.00
Net realized investment gains:			
Other-than-temporary impairment losses	$ (4,706.00)	$ (12,078.00)	$ (14,250.00)
Other-than-temporary impairment losses recognized in other compr	$ -	$ -	$ (5,946.00)
Other-than-temporary impairment losses recognized in net income	$ (4,706.00)	$ (12,078.00)	$ (20,196.00)
Net realized investment gains, excluding other-than-temporary impa	$ 67,858.00	$ 43,671.00	$ 56,053.00
Net realized investment gains	$ 63,152.00	$ 31,593.00	$ 35,857.00
Other revenues	$ 710,942.00	$ 539,284.00	$ 351,077.00
Total Operating Revenues	$ 4,323,083.00	$ 3,000,112.00	$ 2,629,950.00
OPERATING EXPENSES			
Losses and loss adjustment expenses	$ 1,816,273.00	$ 1,154,068.00	$ 1,209,986.00
Underwriting, acquisition and insurance expenses	$ 1,312,312.00	$ 929,472.00	$ 810,179.00
Amortization of intangible assets	$ 55,223.00	$ 33,512.00	$ 24,291.00
Other expenses	$ 663,528.00	$ 478,248.00	$ 309,046.00
Total Operating Expenses	$ 3,847,336.00	$ 2,595,300.00	$ 2,353,502.00
Operating Income	$ 475,747.00	$ 404,812.00	$ 276,448.00
Interest expense	$ 114,004.00	$ 92,762.00	$ 86,252.00
Loss Ratio	0.562	0.537	0.611
Income Before Income Taxes	$ 361,743.00	$ 312,050.00	$ 190,196.00
Income tax expense	$ 77,898.00	$ 53,802.00	$ 41,710.00
Net Income	$ 283,845.00	$ 258,248.00	$ 148,486.00
Net income attributable to noncontrolling interests	$ 2,824.00	$ 4,863.00	$ 6,460.00
Net Income to Shareholders	$ 281,021.00	$ 253,385.00	$ 142,026.00

Section 11: OneBeacon Insurance

Figure 1: Income Statement			
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues			
Earned premiums	$ 1,120.40	$ 1,132.00	$ 1,012.20
Net investment income	$ 41.10	$ 53.60	$ 71.40
Net realized and change in unrealized investment gains	$ 49.40	$ 55.70	$ 10.60
Net other revenues (expenses)	$ 31.20	$ (0.50)	$ (12.40)
Total revenues	$ 1,242.10	$ 1,240.80	$ 1,081.80
Expenses			
Loss and loss adjustment expenses	$ 622.10	$ 650.00	$ 548.30
Policy acquisition expenses	$ 208.90	$ 249.40	$ 221.20
Other underwriting expenses	$ 204.80	$ 205.20	$ 162.30
General and administrative expenses	$ 12.00	$ 13.40	$ 9.80
Interest expense	$ 13.00	$ 16.90	$ 20.50
Total expenses	$ 1,060.80	$ 1,134.90	$ 962.10
Loss Ratio	0.555	0.574	0.542
Pre-tax income from continuing operations	$ 181.30	$ 105.90	$ 119.70
Income tax expense	$ (34.30)	$ (8.40)	$ (14.80)
Net income from continuing operations	$ 147.00	$ 97.50	$ 104.90
Loss from discontinued operations, net of tax	$ (46.60)	$ (24.30)	$ (29.60)
Gain (loss) from sale of discontinued operations, net of tax	$ 46.60	$ (91.00)	$ (19.20)
Net income (loss), including noncontrolling interests	$ 147.00	$ (17.80)	$ 56.10
Less: Net income attributable to noncontrolling interests	$ (1.00)	$ (1.40)	$ (1.00)
Net income (loss) attributable to OneBeacon's common shareholders	$ 146.00	$ (19.20)	$ 55.10

Section 12: ProAssurance

Figure 1: Income Statement			
Consolidated Statements of Income and Comprehensive Income (USD $)	12 Months Ended		
In Thousands, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues			
Net premiums earned	$ 527,919.00	$ 550,664.00	$ 565,415.00
Net investment income	$ 129,265.00	$ 136,094.00	$ 140,956.00
Equity in earnings (loss) of unconsolidated subsidiaries	$ 7,539.00	$ (6,873.00)	$ (9,147.00)
Net realized investment gains (losses):			
Other-than-temporary impairment (OTTI) losses	$ (71.00)	$ (1,566.00)	$ (5,189.00)
Portion of OTTI losses recognized in (reclassified from) other comprehens	$ -	$ (201.00)	$ (823.00)
Net impairment losses recognized in earnings	$ (71.00)	$ (1,767.00)	$ (6,012.00)
Other net realized investment gains (losses)	$ 67,975.00	$ 30,630.00	$ 12,006.00
Total net realized investment gains (losses)	$ 67,904.00	$ 28,863.00	$ 5,994.00
Other income	$ 7,551.00	$ 7,106.00	$ 13,566.00
Total revenues	$ 740,178.00	$ 715,854.00	$ 716,784.00
Expenses			
Losses and loss adjustment expenses	$ 243,015.00	$ 161,726.00	$ 151,270.00
Reinsurance recoveries	$ (18,254.00)	$ 18,187.00	$ 11,017.00
Net losses and loss adjustment expenses	$ 224,761.00	$ 179,913.00	$ 162,287.00
Underwriting, policy acquisition and operating expenses	$ 147,817.00	$ 135,631.00	$ 136,421.00
Interest expense	$ 2,755.00	$ 2,181.00	$ 3,478.00
Loss on extinguishment of debt	$ -	$ 2,163.00	$ -
Total expenses	$ 375,333.00	$ 319,888.00	$ 302,186.00
Gain on acquisition	$ 32,314.00	$ -	$ -
Loss Ratio	**0.460**	**0.294**	**0.268**
Income before income taxes	$ 397,159.00	$ 395,966.00	$ 414,598.00
Provision for income taxes			
Current expense (benefit)	$ 74,977.00	$ 82,752.00	$ 128,553.00
Deferred expense (benefit)	$ 24,659.00	$ 37,744.00	$ (1,051.00)
Total income tax expense (benefit)	$ 99,636.00	$ 120,496.00	$ 127,502.00
Net income	$ 297,523.00	$ 275,470.00	$ 287,096.00

Section 13: Progressive

Figure 1: Income Statement			
Consolidated Statements of Comprehensive Income (USD $)	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues			
Net premiums earned	$ 17,103.40	$ 16,018.00	$ 14,902.80
Investment income	$ 422.00	$ 443.00	$ 480.00
Other-than-temporary impairment (OTTI) losses:			
Total OTTI losses	$ (6.00)	$ (7.30)	$ (6.00)
Non-credit losses, net of credit losses recognized on previously r	$ (0.10)	$ (0.70)	$ 0.50
Net impairment losses recognized in earnings	$ (6.10)	$ (8.00)	$ (5.50)
Net realized gains (losses) on securities	$ 324.50	$ 314.80	$ 108.10
Total net realized gains (losses) on securities	$ 318.40	$ 306.80	$ 102.60
Fees and other revenues	$ 291.80	$ 281.80	$ 266.50
Service revenues	$ 39.60	$ 36.10	$ 22.80
Gains (losses) on extinguishment of debt	$ (4.30)	$ (1.80)	$ (0.10)
Total revenues	$ 18,170.90	$ 17,083.90	$ 15,774.60
Expenses			
Losses and loss adjustment expenses	$ 12,472.40	$ 11,948.00	$ 10,634.80
Policy acquisition costs	$ 1,451.80	$ 1,436.60	$ 1,399.20
Other underwriting expenses	$ 2,350.90	$ 2,206.30	$ 2,088.00
Investment expenses	$ 18.80	$ 15.40	$ 13.50
Service expenses	$ 38.80	$ 36.10	$ 19.40
Interest expense	$ 118.20	$ 123.80	$ 132.70
Total expenses	$ 16,450.90	$ 15,766.20	$ 14,287.60
Loss Ratio	**0.729**	**0.746**	**0.714**
Income before income taxes	$ 1,720.00	$ 1,317.70	$ 1,487.00
Provision for income taxes	$ 554.60	$ 415.40	$ 471.50
Net income	$ 1,165.40	$ 902.30	$ 1,015.50

Section 14: RLI Corporation

Figure 1: Income Statement			
Consolidated Statements of Income (USD $)	12 Months Ended		
In Thousands, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues:			
Net premiums earned	$ 1,736,072.00	$ 1,584,119.00	$ 1,439,313.00
Net investment income earned	$ 134,643.00	$ 131,877.00	$ 147,443.00
Net realized gains:			
Net realized investment gains	$ 26,375.00	$ 13,252.00	$ 15,426.00
Other-than-temporary impairments	$ (5,566.00)	$ (1,711.00)	$ (11,998.00)
Other-than-temporary impairments on fixed maturity securities recd	$ (77.00)	$ (2,553.00)	$ (1,188.00)
Total net realized gains	$ 20,732.00	$ 8,988.00	$ 2,240.00
Other income	$ 12,294.00	$ 9,118.00	$ 8,479.00
Total revenues	$ 1,903,741.00	$ 1,734,102.00	$ 1,597,475.00
Expenses:			
Losses and loss expenses incurred	$ 1,121,738.00	$ 1,120,990.00	$ 1,074,987.00
Policy acquisition costs	$ 579,977.00	$ 526,143.00	$ 466,404.00
Interest expense	$ 22,538.00	$ 18,872.00	$ 18,259.00
Other expenses	$ 35,686.00	$ 30,462.00	$ 26,425.00
Total expenses	$ 1,759,939.00	$ 1,696,467.00	$ 1,586,075.00
Loss Ratio	0.646	0.708	0.747
Income from continuing operations, before federal income tax	$ 143,802.00	$ 37,635.00	$ 11,400.00
Federal income tax expense (benefit):			
Current	$ 24,147.00	$ 5,647.00	$ (228.00)
Deferred	$ 12,240.00	$ (5,975.00)	$ (11,055.00)
Total federal income tax expense (benefit)	$ 36,387.00	$ (328.00)	$ (11,283.00)
Net income from continuing operations	$ 107,415.00	$ 37,963.00	$ 22,683.00
Loss on disposal of discontinued operations, net of tax of $(538) –	$ (997.00)	$ -	$ (650.00)
Net income	$ 106,418.00	$ 37,963.00	$ 22,033.00

Section 15: Selective Insurance

Figure 1: Income Statement			
Consolidated Statements of Earnings and Comprehensive Earnings (USD $)	12 Months Ended		
In Thousands, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Consolidated Statements of Earnings and Comprehensive Earnings			
Net premiums earned	$ 630,802.00	$ 576,571.00	$ 538,452.00
Net investment income	$ 52,763.00	$ 58,831.00	$ 63,681.00
Net realized investment gains	$ 22,036.00	$ 26,528.00	$ 17,293.00
Other-than-temporary-impairment losses on investments		$ (1,156.00)	$ (257.00)
Consolidated revenue	$ 705,601.00	$ 660,774.00	$ 619,169.00
Losses and settlement expenses	$ 259,801.00	$ 271,645.00	$ 200,084.00
Policy acquisition costs	$ 210,651.00	$ 196,362.00	$ 183,868.00
Insurance operating expenses	$ 53,557.00	$ 44,971.00	$ 44,312.00
Interest expense on debt	$ 8,095.00	$ 6,050.00	$ 6,050.00
General corporate expenses	$ 8,746.00	$ 7,867.00	$ 7,766.00
Total expenses	$ 540,850.00	$ 526,895.00	$ 442,080.00
Equity in earnings of unconsolidated investee	$ 10,915.00	$ 8,853.00	$ 6,497.00
Loss Ratio	0.412	0.471	0.372
Earnings before income taxes	$ 175,666.00	$ 142,732.00	$ 183,586.00
Income tax expense:			
Current	$ 43,346.00	$ 35,605.00	$ 49,524.00
Deferred	$ 6,065.00	$ 3,781.00	$ 7,464.00
Income tax expense:	$ 49,411.00	$ 39,386.00	$ 56,988.00
Net earnings	$ 126,255.00	$ 103,346.00	$ 126,598.00

Section 16: Travelers

Figure 1: Income Statement			
Consolidated Statement of Income (USD $)	12 Months Ended		
In Millions, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
Revenues			
Premiums	$22,637	$22,357	$22,090
Net investment income	$2,716	$2,889	$2,879
Fee income	$395	$323	$296
Net realized investment gains	$166	$51	$55
Other revenues	$277	$120	$126
Total revenues	$26,191	$25,740	$25,446
Claims and expenses			
Claims and claim adjustment expenses	$13,307	$14,676	$16,276
Amortization of deferred acquisition costs	$3,821	$3,910	$3,876
General and administrative expenses	$3,757	$3,610	$3,556
Interest expense	$361	$378	$386
Total claims and expenses	$21,246	$22,574	$24,094
Loss Ratio	0.588	0.656	0.737
Income before income taxes	$4,945	$3,166	$1,352
Income tax expense (benefit)	$1,272	$693	($74)
Net income	$3,673	$2,473	$1,426

Section 17: WR Berkley

Figure 1: Income Statement			
Consolidated Statements of Income (USD $)	12 Months Ended		
In Thousands, except Per Share data, unless otherwise specified	Dec. 31, 2013	Dec. 31, 2012	Dec. 31, 2011
REVENUES:			
Net premiums written	$ 5,500,173.00	$ 4,898,539.00	$ 4,357,368.00
Change in net unearned premiums	$ (273,636.00)	$ (225,023.00)	$ (196,501.00)
Net premiums earned	$ 5,226,537.00	$ 4,673,516.00	$ 4,160,867.00
Net investment income	$ 544,291.00	$ 586,763.00	$ 526,351.00
Insurance service fees	$ 107,513.00	$ 103,133.00	$ 92,843.00
Net investment gains:			
Net realized gains on investment sales	$ 127,586.00	$ 201,451.00	$ 125,881.00
Other-than-temporary impairments and change in valuation allowar	$ (6,042.00)	$ 9,014.00	$ (400.00)
Net investment gains	$ 121,544.00	$ 210,465.00	$ 125,481.00
Revenues from wholly-owned investees	$ 407,623.00	$ 247,113.00	$ 248,678.00
Other income	$ 1,026.00	$ 2,564.00	$ 1,764.00
Total revenues	$ 6,408,534.00	$ 5,823,554.00	$ 5,155,984.00
OPERATING COSTS AND EXPENSES:			
Losses and loss expenses	$ 3,197,024.00	$ 2,948,479.00	$ 2,658,365.00
Other operating costs and expenses	$ 2,000,684.00	$ 1,799,623.00	$ 1,626,526.00
Expenses from wholly-owned investees	$ 388,761.00	$ 247,222.00	$ 245,495.00
Interest expense	$ 123,177.00	$ 126,302.00	$ 112,512.00
Total operating costs and expenses	$ 5,709,646.00	$ 5,121,626.00	$ 4,642,898.00
Loss Ratio	0.581	0.602	0.610
Income before income taxes	$ 698,888.00	$ 701,928.00	$ 513,086.00
Income tax expense	$ (193,587.00)	$ (191,285.00)	$ (121,945.00)
Net income before noncontrolling interests	$ 505,301.00	$ 510,643.00	$ 391,141.00
Noncontrolling interests	$ (5,376.00)	$ (51.00)	$ 70.00
Net income to common stockholders	$ 499,925.00	$ 510,592.00	$ 391,211.00

Appendix B: Pricing Models

Section 1: Allstate

Figure 1: Market Multiples

	Torchmark	Chubb	ACE	Berkshire Hathaway	Average
M/B Ratio	$ 1.85	$ 1.49	$ 1.22	$ 1.32	$ 1.47
P/E Trailing	$ 9.87	$ 14.40	$ 10.43	$ 17.57	$ 13.07
P/E Forward	$ 13.72	$ 12.03	$ 11.07	$ 19.31	$ 14.03

	Travelers	Multiplier	Valuation
Book Value	$ 49.67	$ 1.47	$ 73.04
Trailing EPS	$ 5.79	$ 13.07	$ 75.65
Forward EPS	$ 5.69	$ 14.03	$ 79.87
Valued Price (Average)			**$ 76.19**

Figure 2: Enterprise Value Multiples

	Torchmark	Chubb	ACE	Berkshire Hathaway	Average
EV	$ 8,177.54	$ 27,241.86	$ 40,616.87	$ 143,275.42	
EBITDA	$ 843.59	$ 3,450.00	$ 4,513.00	$ 31,087.00	
EV/EBITDA	9.69	7.90	9.00	4.61	7.80

EBITDA Allstate	$ 3,117.76
EV Based on Competition	$ 9.36
Expected Market Cap (EV*EBITDA)	$ 29,186.99
ADD: Cash	$ 675.00
LESS: Preferred Equity	$ 807.50
LESS: Minority Interest	$ -
LESS: Total Debt	$ 6,201.00
EV based on competition	**$ 22,853.49**
Shares Outstanding	416
Price	**$ 54.88**

Figure 3: Residual Income

T=1		T=2		Discounted AER1	1.53
EPS1	$ 5.36	EPS2	$ 5.71	ADD: Discounted AER2	1.35
BVPS0	$ 44.53	BVPS1	$ 49.67	AER(2)	2.87
Ke	8.31%	Ke	8.31%		
AER1	1.652873236	AER2	1.579212332		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 68.02**		

Section 2: American Financial Group

Figure 1: Market Multiples					
	Hartford	ACE	Chubb	Arch Capital	Average
M/B Ratio	$ 0.87	$ 1.22	$ 1.49	$ 1.41	$ 1.25
P/E Trailing	$ 8.58	$ 10.43	$ 14.40	$ 16.32	$ 12.44
P/E Forward	$ 11.87	$ 11.07	$ 12.03	$ 18.75	$ 13.43

	American	Multiplier	Valuation
Book Value	$ 55.21	$ 1.25	$ 68.81
Trailing EPS	$ 4.80	$ 12.44	$ 59.69
Forward EPS	$ 4.68	$ 13.43	$ 62.84
Valued Price (Average)			**$ 63.78**

Figure 2: Enterprise Value Multiples					
	Hartford	ACE	Chubb	Arch Capital	Average
EV	$ 21,622.70	$ 40,616.87	$ 27,241.86	$ 8,770.00	
EBITDA	$ 3,442.00	$ 4,513.00	$ 3,450.00	$ 781.90	
EV/EBITDA	6.28	9.00	7.90	11.22	8.60

EBITDA American Financial	$ 760.00
EV Based on Competition	$ 8.60
Expected Market Cap (EV*EBITDA)	$ 6,534.94
ADD: Cash	$ 1,639.00
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ 170.00
LESS: Total Debt	$ 913.00
EV based on competition	**$ 7,090.94**
Shares Outstanding	88
Price	**$ 80.75**

Figure 3: Residual Income					
T=1		T=2		Discounted AER1	0.22
EPS1	$ 4.76	EPS2	$ 5.31	ADD: Discounted AER2	0.35
BVPS0	$ 51.03	BVPS1	$ 55.21	AER(2)	0.57
Ke	8.87%	Ke	8.87%		
AER1	0.23548016	AER2	0.415500122		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 61.28**		

Section 3: Amtrust Financial

Figure 1: Market Multiples					
	Progressive	Mercury	Hanover	Selective	Average
M/B Ratio	$ 2.63	$ 1.50	$ 1.01	$ 1.31	$ 1.61
P/E Trailing	$ 18.29	$ 29.54	$ 57.15	$ 32.92	$ 34.48
P/E Forward	$ 17.13	$ 22.80	$ 11.18	$ 16.40	$ 16.88

	Amtrust	Multiplier	Valuation
Book Value	$ 22.53	$ 1.61	$ 36.29
Trailing EPS	$ 5.32	$ 34.48	$ 183.41
Forward EPS	$ 5.28	$ 16.88	$ 89.11
Valued Price (Average)			**$ 102.94**

Figure 2: Enterprise Value Multiples					
	Progressive	Mercury	Hanover	Selective	Average
EV	$ 18,033.27	$ 2,656.30	$ 3,027.03	$ 1,905.46	
EBITDA	$ 1,838.20	$ 133.36	$ 394.40	$ 166.34	
EV/EBITDA	9.81	19.92	7.68	11.46	12.21

EBITDA Amtrust Financial	$ 404.47
EV Based on Competition	$ 12.21
Expected Market Cap (EV*EBITDA)	$ 4,940.54
ADD: Cash	$ 830.02
LESS: Preferred Equity	$ 115.00
LESS: Minority Interest	$ 138.46
LESS: Total Debt	$ 1,021.37
EV based on competition	**$ 4,495.73**
Shares Outstanding	82
Price	**$ 54.88**

Figure 3: Residual Income						
T=1		T=2		Discounted AER1		3.98
EPS1	$ 5.49	EPS2	$ 5.44	ADD: Discounted AER2		3.38
BVPS0	$ 17.65	BVPS1	$ 22.53	AER(2)		7.36
Ke	6.96%	Ke	6.96%			
AER1	4.256672234	AER2	3.868599169			

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 8.48**		

Section 4: Chubb

Figure 1: Market Multiples					
	ACE	Travelers	WR Berkley	Cincinnati	Average
M/B Ratio	$ 1.22	$ 1.29	$ 1.32	$ 1.41	$1.31
P/E Trailing	$ 10.43	$ 11.55	$ 14.64	$ 16.32	$13.24
P/E Forward	$ 11.07	$ 9.57	$ 14.43	$ 18.75	$13.45

	Chubb	Multiplier	Valuation
Book Value	$ 71.54	$ 1.31	$ 93.73
Trailing EPS	$ 7.69	$ 13.24	$ 101.76
Forward EPS	$ 7.58	$ 13.45	$ 102.03
Valued Price (Average)			**$ 99.17**

Figure 2: Enterprise Value Multiples					
	ACE	Travelers	WR Berkley	Cincinnati	Average
EV	$ 40,616.87	$ 38,057.89	$ 7,125.74	$ 9,042.31	
EBITDA	$ 4,513.00	$ 5,306.00	$ 811.95	$ 768.00	
EV/EBITDA	9.00	7.17	8.78	11.77	9.18

EBITDA Chubb	$ 3,450.00
EV Based on Competition	$ 9.18
Expected Market Cap (EV*EBITDA)	$ 31,673.21
ADD: Cash	$52.00
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ -
LESS: Total Debt	$ 3,300.00
EV based on competition	**$ 28,425.21**
Shares Outstanding	231
Price	**$ 123.31**

Figure 3: Residual Income					
T=1		T=2		Discounted AER1	2.06
EPS1	$ 7.51	EPS2	$ 7.68	ADD: Discounted AER2	1.45
BVPS0	$ 63.24	BVPS1	$ 71.54	AER(2)	3.51
Ke	8.35%	Ke	8.35%		
AER1	2.228130226	AER2	1.704403026		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91

Section 5: Cincinnati Financial

Figure 1: Market Multiples

	Chubb	AIG	Travelers	Arch Capital	Average
M/B Ratio	$ 1.49	$ 0.74	$ 1.29	$ 1.41	$ 1.23
P/E Trailing	$ 14.40	$ 8.62	$ 11.55	$ 16.32	$ 12.72
P/E Forward	$ 12.03	$ 9.69	$ 9.57	$ 18.75	$ 12.51

	Cincinnati	Multiplier	Valuation
Book Value	$ 39.79	$ 1.23	$ 49.06
Trailing EPS	$ 3.09	$ 12.72	$ 39.34
Forward EPS	$ 3.03	$ 12.51	$ 37.93
Valued Price (Average)			**$ 42.11**

Figure 2: Enterprise Value Multiples

	Chubb	AIG	Travelers	Arch Capital	Average
	$ 27,241.86	$ 114,833.43	$ 38,057.89	$ 8,770.00	
DA	$ 3,450.00	$ 11,510.00	$ 5,306.00	$ 781.90	
BITDA	7.90	9.98	7.17	11.22	9.07

DA Cincinnati	$ 768.00
ased on Competition	$ 9.07
cted Market Cap (EV*EBITDA)	$ 6,962.29
Cash	$ 433.00
Preferred Equity	$ -
Minority Interest	$ -
Total Debt	$ 939.00
ased on competition	**$ 6,456.29**
es Outstanding	164
	$ 39.31

Figure 3: Residual Income

		T=2		Discounted AER1	-0.56
	$ 2.62	EPS2	$ 2.74	ADD: Discounted AER2	-0.66
0	$ 36.48	BVPS1	$ 39.79	AER(2)	-1.21
	8.85%	Ke	8.85%		
	-0.607353326	AER2	-0.777572126		

	Constant	Book Value	AER 2
plier	3.84	1.06	5.91
	$ 35.33		

Section 6: First American Financial

Figure 1: Market Multiples					
	Amtrust Financial	CoreLogic	NationStar	MFA Financial	Average
M/B Ratio	$ 1.84	$ 3.10	$ 3.39	$ 0.88	$ 2.30
P/E Trailing	$ 12.69	$ 16.76	$ 12.91	$ 9.73	$ 13.02
P/E Forward	$ 10.22	$ 25.81	$ 14.00	$ 8.99	$ 14.75

	First American	Multiplier	Valuation
Book Value	$ 24.36	$ 2.30	$ 56.11
Trailing EPS	$ 1.26	$ 13.02	$ 16.46
Forward EPS	$ 1.28	$ 14.75	$ 18.83
Valued Price (Average)			**$ 30.47**

Figure 2: Enterprise Value Multiples					
	Amtrust Financial	CoreLogic	NationStar	MFA Financial	Average
EV	$ 2,888.88	$ 3,935.75	$12,329.91	$ 11,401.66	
EBITDA	$ 404.47	$ 142.14	$ 346.25	$ 444.97	
EV/EBITDA	7.14	27.69	35.61	25.62	24.02

EBITDA First American	$ 326.01
EV Based on Competition	$ 24.02
Expected Market Cap (EV*EBITDA)	$ 7,829.44
ADD: Cash	$ 834.84
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ 3.19
LESS: Total Debt	$ 310.29
EV based on competition	**$ 8,350.80**
Shares Outstanding	108
Price	**$ 77.48**

Figure 3: Residual Income					
T=1		T=2		Discounted AER1	0.09
EPS1	$ 1.88	EPS2	$ 2.35	ADD: Discounted AER2	0.39
BVPS0	$ 22.89	BVPS1	$ 24.36	AER(2)	0.49
Ke	7.75%	Ke	7.75%		
AER1	0.100829742	AER2	0.457479682		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 30.98**		

Section 7: Hanover

Figure 1: Market Multiples					
	Arch Capital	Cincinnati	Travelers	ACE	Average
M/B Ratio	$ 1.22	$ 1.50	$ 1.41	$ 1.29	$ 1.35
P/E Trailing	$ 10.43	$ 14.74	$ 16.32	$ 11.55	$ 13.26
P/E Forward	$ 11.07	$ 12.82	$ 18.75	$ 9.57	$ 13.05

	Hanover	Multiplier	Valuation
Book Value	$ 64.82	$ 1.35	$ 87.78
Trailing EPS	$ 4.68	$ 13.26	$ 62.06
Forward EPS	$ 4.86	$ 13.05	$ 63.43
Valued Price (Average)			**$ 71.09**

Figure 2: Enterprise Value Multiples					
	Arch Capital	Cincinnati	Travelers	ACE	Average
EV	$ 40,616.87	$ 8,770.00	$ 9,042.31	$ 38,057.89	
EBITDA	$ 4,513.00	$ 781.90	$ 768.00	$ 5,306.00	
EV/EBITDA	9.00	11.22	11.77	7.17	9.79

EBITDA Hanover	$ 394.40
EV Based on Competition	$ 9.79
Expected Market Cap (EV*EBITDA)	$ 3,861.44
ADD: Cash	$ 486.20
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ -
LESS: Total Debt	$ 903.90
EV based on competition	**$ 3,443.74**
Shares Outstanding	44
Price	**$ 77.73**

Figure 3: Residual Income					
T=1		T=2		Discounted AER1	-0.50
EPS1	$ 4.89	EPS2	$ 5.70	ADD: Discounted AER2	-0.23
BVPS0	$ 58.95	BVPS1	$ 64.82	AER(2)	-0.73
Ke	9.22%	Ke	9.22%		
AER1	-0.54911291	AER2	-0.275219661		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 61.99**		

Section 8: HCC Insurance Group

Figure 1: Market Multiples					
	Cincinnati	ACE	Hanover	AIG	Average
M/B Ratio	$ 1.41	$ 1.22	$ 1.01	$ 0.74	$ 1.09
P/E Trailing	$ 16.32	$ 10.43	$ 57.15	$ 8.62	$ 23.13
P/E Forward	$ 18.75	$ 11.07	$ 11.18	$ 9.69	$ 12.67

	HCC	Multiplier	Valuation
Book Value	$ 40.50	$ 1.09	$ 44.31
Trailing EPS	$ 3.64	$ 23.13	$ 84.20
Forward EPS	$ 3.62	$ 12.67	$ 45.82
Valued Price (Average)			**$ 58.11**

Figure 2: Enterprise Value Multiples					
	Cincinnati	ACE	Hanover	AIG	Average
EV	$ 9,042.31	$ 40,616.87	$ 3,027.03	$ 114,833.43	
EBITDA	$ 768.00	$ 4,513.00	$ 394.40	$ 11,510.00	
EV/EBITDA	11.77	9.00	7.68	9.98	9.61

EBITDA HCC Insurance	$ 598.92
EV Based on Competition	$ 9.61
Expected Market Cap (EV*EBITDA)	$ 5,753.48
ADD: Cash	$ 58.30
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ -
LESS: Total Debt	$ 654.10
EV based on competition	**$ 5,157.68**
Shares Outstanding	96
Price	**$ 53.56**

Figure 3: Residual Income					
T=1		T=2		Discounted AER1	0.94
EPS1	$ 4.04	EPS2	$ 4.00	ADD: Discounted AER2	0.56
BVPS0	$ 36.59	BVPS1	$ 40.50	AER(2)	1.51
Ke	8.25%	Ke	8.25%		
AER1	1.02060581	AER2	0.659043181		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 51.52**		

Section 9: Loews

Figure 1: Market Multiples					
	Hartford	AIG	ACE	Cincinnati	Average
M/B Ratio	$ 0.87	$ 0.74	$ 1.22	$ 1.41	$ 1.06
P/E Trailing	$ 8.58	$ 8.62	$ 10.43	$ 16.32	$ 10.99
P/E Forward	$ 11.87	$ 9.69	$ 11.07	$ 18.75	$ 12.84

	Loews	Multiplier	Valuation
Book Value	$ 52.29	$ 1.06	$ 55.41
Trailing EPS	$ 2.76	$ 10.99	$ 30.33
Forward EPS	$ 2.94	$ 12.84	$ 37.76
Valued Price (Average)			**$ 41.17**

Figure 2: Enterprise Value Multiples					
	Hartford	AIG	ACE	Cincinnati	Average
EV	$ 21,622.70	$ 114,833.43	$ 40,616.87	$ 9,042.31	
EBITDA	$ 3,442.00	$ 11,510.00	$ 4,513.00	$ 768.00	
EV/EBITDA	6.28	9.98	9.00	11.77	9.26

EBITDA Loews	$ 2,702.00
EV Based on Competition	$ 9.26
Expected Market Cap (EV*EBITDA)	$ 25,015.57
ADD: Cash	$ 294.00
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ 5,448.00
LESS: Total Debt	$ 10,344.00
EV based on competition	**$ 9,517.57**
Shares Outstanding	373
Price	**$ 25.50**

Figure 3: Residual Income					
T=1		T=2		Discounted AER1	-2.08
EPS1	$ 2.55	EPS2	$ 3.12	ADD: Discounted AER2	-1.53
BVPS0	$ 50.98	BVPS1	$ 52.29	AER(2)	-3.61
Ke	9.47%	Ke	9.47%		
AER1	-2.276712569	AER2	-1.830268079		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 36.56**		

Section 10: Markel

Figure 1: Market Multiples					
	ACE	Cincinnati	Arch Capital	Hanover	Average
M/B Ratio	$ 1.22	$ 1.41	$ 1.50	$ 1.41	$ 1.38
P/E Trailing	$ 10.43	$ 16.32	$ 14.74	$ 16.32	$ 14.45
P/E Forward	$ 11.07	$ 18.75	$ 12.82	$ 18.75	$ 15.35
		Markel	Multiplier	Valuation	
Book Value		$ 524.65	$ 1.38	$ 725.60	
Trailing EPS		$ 23.53	$ 14.45	$ 340.13	
Forward EPS		$ 23.41	$ 15.35	$ 359.27	
Valued Price (Average)				**$ 475.00**	

Figure 2: Enterprise Value Multiples					
	ACE	Cincinnati	Arch Capital	Hanover	Average
EV	$ 40,616.87	$ 9,042.31	$ 8,770.00	$ 3,027.03	
EBITDA	$ 4,513.00	$ 768.00	$ 781.90	$ 394.40	
EV/EBITDA	9.00	11.77	11.22	7.68	9.92
EBITDA Markel	$ 475.75				
EV Based on Competition	$ 9.92				
Expected Market Cap (EV*EBITDA)	$ 4,717.64				
ADD: Cash	$ 1,978.53				
LESS: Preferred Equity	$ -				
LESS: Minority Interest	$ 76.62				
LESS: Total Debt	$ 2,256.23				
EV based on competition	**$ 4,363.32**				
Shares Outstanding	14				
Price	**$ 313.84**				

Figure 3: Residual Income					
T=1		T=2		Discounted AER1	-17.79
EPS1	$ 18.61	EPS2	$ 23.38	ADD: Discounted AER2	-15.96
BVPS0	$ 472.33	BVPS1	$ 524.65	AER(2)	-33.75
Ke	8.01%	Ke	8.01%		
AER1	-19.2101922	AER2	-18.62182139		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 305.05**		

Section 11: OneBeacon Insurance

Figure 1: Market Multiples					
	Cincinnati	Selective	Allstate	ACE	Average
M/B Ratio	$ 1.41	$ 1.31	$ 1.18	$ 1.22	$ 1.28
P/E Trailing	$ 16.32	$ 32.92	$ 9.65	$ 10.43	$ 17.33
P/E Forward	$ 18.75	$ 16.40	$ 9.23	$ 11.07	$ 13.86

	OneBeacon	Multiplier	Valuation
Book Value	$ 11.58	$ 1.28	$ 14.82
Trailing EPS	$ 0.86	$ 17.33	$ 14.91
Forward EPS	$ 0.80	$ 13.86	$ 11.09
Valued Price (Average)			**$ 13.61**

Figure 2: Enterprise Value Multiples					
	Cincinnati	Selective	Allstate	ACE	Average
EV	$ 9,042.31	$ 1,905.46	$30,821.96	$ 40,616.87	
EBITDA	$ 768.00	$ 166.34	$ 3,763.00	$ 4,513.00	
EV/EBITDA	11.77	11.46	8.19	9.00	10.10

EBITDA OneBeacon	$ 194.30
EV Based on Competition	$ 10.10
Expected Market Cap (EV*EBITDA)	$ 1,963.39
ADD: Cash	$ 168.10
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ 3.10
LESS: Total Debt	$ 274.70
EV based on competition	**$ 1,853.69**
Shares Outstanding	24
Price	**$ 78.71**

Figure 3: Residual Income					
T=1		T=2		Discounted AER1	0.00
EPS1	$ 0.98	EPS2	$ 0.93	ADD: Discounted AER2	-0.03
BVPS0	$ 11.15	BVPS1	$ 10.99	AER(2)	-0.04
Ke	8.85%	Ke	8.85%		
AER1	-0.00416855	AER2	-0.03971959		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 15.44**		

Section 12: ProAssurance

Figure 1: Market Multiples

	WR Berkley	Cincinnati	Hanover	Chubb	Average
M/B Ratio	$ 1.32	$ 1.41	$ 1.01	$ 1.49	$ 1.31
P/E Trailing	$ 14.64	$ 16.32	$ 57.15	$ 14.40	$ 25.63
P/E Forward	$ 14.43	$ 18.75	$ 11.18	$ 12.03	$ 14.09

	ProAssurance	Multiplier	Valuation
Book Value	$ 39.39	$ 1.31	$ 51.46
Trailing EPS	$ 2.73	$ 25.63	$ 70.02
Forward EPS	$ 2.75	$ 14.09	$ 38.79
Valued Price (Average)			**$ 53.42**

Figure 2: Enterprise Value Multiples

	WR Berkley	Cincinnati	Hanover	Chubb	Average
EV	$ 7,125.74	$ 9,042.31	$ 3,027.03	$ 27,241.86	
EBITDA	$ 811.95	$ 768.00	$ 394.40	$ 3,450.00	
EV/EBITDA	8.78	11.77	7.68	7.90	9.03

EBITDA ProAssurance	$ 399.91
EV Based on Competition	$ 9.03
Expected Market Cap (EV*EBITDA)	$ 3,611.34
ADD: Cash	$ 129.38
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ -
LESS: Total Debt	$ 250.00
EV based on competition	**$ 3,490.72**
Shares Outstanding	56
Price	**$ 62.54**

Figure 3: Residual Income

T=1		T=2		Discounted AER1	-0.10
EPS1	$ 2.98	EPS2	$ 2.87	ADD: Discounted AER2	-0.22
BVPS0	$ 38.77	BVPS1	$ 39.39	AER(2)	-0.32
Ke	7.95%	Ke	7.95%		
AER1	-0.103270091	AER2	-0.259579508		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 43.05**		

Section 13: Progressive

Figure 1: Market Multiples

	ACE	Chubb	Allstate	Berkshire Hathaway	Average
M/B Ratio	$ 1.22	$ 1.49	$ 1.18	$ 1.41	$ 1.33
P/E Trailing	$ 10.43	$ 14.40	$ 9.65	$ 16.32	$ 12.70
P/E Forward	$ 11.07	$ 12.03	$ 9.23	$ 18.75	$ 12.77

	Progressive	Multiplier	Valuation
Book Value	$ 11.62	$ 1.33	$ 15.41
Trailing EPS	$ 1.79	$ 12.70	$ 22.76
Forward EPS	$ 1.70	$ 12.77	$ 21.75
Valued Price (Average)			**$ 19.97**

Figure 2: Enterprise Value Multiples

	ACE	Chubb	Allstate	Berkshire Hathaway	Average
EV	$ 40,616.87	$ 27,241.86	$ 30,821.96	$ 143,275.42	
EBITDA	$ 4,513.00	$ 3,450.00	$ 3,763.00	$ 31,087.00	
EV/EBITDA	9.00	7.90	8.19	4.61	7.42

EBITDA Progressive	$ 1,838.20
EV Based on Competition	$ 7.42
Expected Market Cap (EV*EBITDA)	$ 13,646.71
ADD: Cash	$ 75.10
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ -
LESS: Total Debt	$ 1,860.90
EV based on competition	**$ 11,860.91**
Shares Outstanding	589
Price	**$ 20.14**

Figure 3: Residual Income

T=1		T=2		Discounted AER1	0.72
EPS1	$ 1.76	EPS2	$ 1.80	ADD: Discounted AER2	0.66
BVPS0	$ 11.09	BVPS1	$ 11.62	AER(2)	1.38
Ke	8.82%	Ke	8.82%		
AER1	0.781829983	AER2	0.777822083		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 23.72**		

Section 14: RLI Corporation

Figure 1: Market Multiples					
	Selective	Cincinnati	Hanover	Hartford	Average
M/B Ratio	$ 1.31	$ 1.41	$ 1.01	$ 0.87	$ 1.15
P/E Trailing	$ 32.92	$ 16.32	$ 57.15	$ 8.58	$ 28.75
P/E Forward	$ 16.40	$ 18.75	$ 11.18	$ 11.87	$ 14.55

	RLI	Multiplier	Valuation
Book Value	$ 21.27	$ 1.15	$ 24.42
Trailing EPS	$ 2.10	$ 28.75	$ 60.37
Forward EPS	$ 2.08	$ 14.55	$ 30.26
Valued Price (Average)			**$ 38.35**

Figure 2: Enterprise Value Multiples					
	Selective	Cincinnati	Hanover	Hartford	Average
EV	$ 1,905.46	$ 9,042.31	$ 3,027.03	$ 21,622.70	
EBITDA	$ 166.34	$ 768.00	$ 394.40	$ 3,442.00	
EV/EBITDA	11.46	11.77	7.68	6.28	9.30

EBITDA RLI	$ 183.76
EV Based on Competition	$ 9.30
Expected Market Cap (EV*EBITDA)	$ 1,708.34
ADD: Cash	$ 39.47
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ -
LESS: Total Debt	$ 149.58
EV based on competition	**$ 1,598.23**
Shares Outstanding	43
Price	**$ 37.03**

Figure 3: Residual Income						
T=1		T=2		Discounted AER1		0.46
EPS1	$ 2.51	EPS2	$ 2.28	ADD: Discounted AER2		0.06
BVPS0	$ 19.32	BVPS1	$ 21.27	AER(2)		0.52
Ke	10.37%	Ke	10.37%			
AER1	0.502698646	AER2	0.075650465			

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 27.38**		

Section 15: Selective Insurance

Figure 1: Market Multiples					
	Hanover	OneBeacon	Hartford	Arch Capital	Average
M/B Ratio	$ 1.01	$ 1.37	$ 0.87	$ 1.50	$ 1.19
P/E Trailing	$ 57.15	$ 34.93	$ 8.58	$ 14.74	$ 28.85
P/E Forward	$ 11.18	$ 16.79	$ 11.87	$ 12.82	$ 13.16

	Selective	Multiplier	Valuation
Book Value	$ 11.58	$ 1.19	$ 13.72
Trailing EPS	$ 2.08	$ 28.85	$ 60.01
Forward EPS	$ 2.01	$ 13.16	$ 26.48
Valued Price (Average)			**$ 33.40**

Figure 2: Enterprise Value Multiples					
	Hanover	OneBeacon	Hartford	Arch Capital	Average
EV	$ 3,027.03	$ 1,618.99	$ 21,622.70	$ 8,770.00	
EBITDA	$ 394.40	$ 194.30	$ 3,442.00	$ 781.90	
EV/EBITDA	7.68	8.33	6.28	11.22	8.38

EBITDA Selective	$ 166.34
EV Based on Competition	$ 8.38
Expected Market Cap (EV*EBITDA)	$ 1,393.34
ADD: Cash	$ 0.19
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ -
LESS: Total Debt	$ 392.41
EV based on competition	**$ 1,001.12**
Shares Outstanding	57
Price	**$ 17.59**

Figure 3: Residual Income					
T=1		T=2		Discounted AER1	0.06
EPS1	$ 2.09	EPS2	$ 2.42	ADD: Discounted AER2	1.10
BVPS0	$ 20.47	BVPS1	$ 10.99	AER(2)	1.17
Ke	9.86%	Ke	9.86%		
AER1	0.071206025	AER2	1.33330011		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 32.45**		

Section 16: Travelers

Figure 1: Market Multiples					
	Chubb	ACE	WR Berkley	Cincinnati	Average
M/B Ratio	$ 1.49	$ 1.22	$ 1.32	$ 1.41	$ 1.36
P/E Trailing	$ 14.40	$ 10.43	$ 14.64	$ 16.32	$ 13.95
P/E Forward	$ 12.03	$ 11.07	$ 14.43	$ 18.75	$ 14.07
		Travelers	Multiplier	Valuation	
	Book Value	$ 78.32	$ 1.36	$ 106.52	
	Trailing EPS	$ 10.50	$ 13.95	$ 146.42	
	Forward EPS	$ 10.34	$ 14.07	$ 145.51	
	Valued Price (Average)			**$ 132.82**	

Figure 2: Enterprise Value Multiples					
	Chubb	ACE	WR Berkley	Cincinnati	Average
EV	$ 27,241.86	$ 40,616.87	$ 7,125.74	$ 9,042.31	
EBITDA	$ 3,450.00	$ 4,513.00	$ 811.95	$ 768.00	
EV/EBITDA	7.90	9.00	8.78	11.77	9.36
EBITDA Travelers	$ 5,306.00				
EV Based on Competition	$ 9.36				
Expected Market Cap (EV*EBITDA)	$ 49,672.30				
ADD: Cash	$ 294.00				
LESS: Preferred Equity	$ -				
LESS: Minority Interest	$ -				
LESS: Total Debt	$ 6,346.00				
EV based on competition	**$ 43,620.30**				
Shares Outstanding	321				
Price	**$ 135.73**				

Residual Income					
T=1		T=2		Discounted AER1	3.63
EPS1	$ 10.03	EPS2	$ 9.52	ADD: Discounted AER2	2.24
BVPS0	$ 69.36	BVPS1	$ 78.32	AER(2)	5.87
Ke	8.76%	Ke	8.76%		
AER1	3.94810631	AER2	2.6552203		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 112.08**		

Section 17: WR Berkley

Figure 1: Market Multiples

	Travelers	ACE	Chubb	Cincinnati	Average
M/B Ratio	$ 1.29	$ 1.22	$ 1.49	$ 1.41	$ 1.35
P/E Trailing	$ 11.55	$ 10.43	$ 14.40	$ 16.32	$ 13.18
P/E Forward	$ 9.57	$ 11.07	$ 12.03	$ 18.75	$ 12.85

	WR Berkley	Multiplier	Valuation
Book Value	$ 36.97	$ 1.35	$ 49.99
Trailing EPS	$ 3.36	$ 13.18	$ 44.28
Forward EPS	$ 2.99	$ 12.85	$ 38.46
Valued Price (Average)			**$ 44.24**

Figure 2: Enterprise Value Multiples

	Travelers	ACE	Chubb	Cincinnati	Average
EV	$ 38,057.89	$ 40,616.87	$ 27,241.86	########	
EBITDA	$ 5,306.00	$ 4,513.00	$ 3,450.00	$ 768.00	
EV/EBITDA	7.17	9.00	7.90	11.77	8.96

EBITDA WR Berkley	$ 811.95
EV Based on Competition	$ 8.96
Expected Market Cap (EV*EBITDA)	$ 7,275.56
ADD: Cash	$ 839.74
LESS: Preferred Equity	$ -
LESS: Minority Interest	$ 33.36
LESS: Total Debt	$ 2,194.52
EV based on competition	**$ 5,887.42**
Shares Outstanding	126
Price	**$ 46.80**

Figure 3: Residual Income

T=1		T=2		Discounted AER1	0.96
EPS1	$ 3.70	EPS2	$ 3.49	ADD: Discounted AER2	0.42
BVPS0	$ 32.91	BVPS1	$ 36.97	AER(2)	1.38
Ke	8.09%	Ke	8.09%		
AER1	1.039493612	AER2	0.494465		

	Constant	Book Value	AER 2
Multiplier	3.84	1.06	5.91
Price	**$ 46.91**		

Appendix C: Residual Income Regression

(From Ball State University Finance Department)

Residual Income Valuation

Truncated Residual Income Model

$$PRICE_{jt} = \alpha_0 + \alpha_1 BVPS_{jt} + \beta_2 AER2_{jt} + e_{jt}$$

$$\text{where } AER\,2_{jt} = \sum_{k=1}^{2} \frac{[FEPS_{jt+k} - r_{esp}\, BVPS_{jt+k-1}]}{(1+r_{es})^k}$$

Pooled Model - all industries combined

- n=343,095; Adj $R^2 = 0.44$

  $PRICE_{jt} = 7.69 + 0.90(BVPS_{jt}) + 6.71(AER2_{jt})$

Industry Specific Models

- Finance (n=71,642; Adj $R^2 = 0.58$)

  $PRICE_{jt} = 3.84 + 1.06(BVPS_{jt}) + 5.91(AER2_{jt})$

- Health (n=29,705; Adj $R^2 = 0.49$)

  $PRICE_{jt} = 8.40 + 1.09(BVPS_{jt}) + 8.86(AER2_{jt})$

- Consumer Non-Durables (n=19,480; Adj $R^2 = 0.54$)

  $PRICE_{jt} = 7.21 + 0.76(BVPS_{jt}) + 7.86(AER2_{jt})$

- Consumer Services (n=54,002; Adj $R^2 = 0.44$)

  $PRICE_{jt} = 7.36 + 0.93(BVPS_{jt}) + 7.84(AER2_{jt})$

- Consumer Durables (n=15,533; Adj $R^2 = 0.54$)

  $PRICE_{jt} = 4.10 + 0.98(BVPS_{jt}) + 5.25(AER2_{jt})$

- Energy (n=16,966; Adj $R^2 = 0.53$)

  $PRICE_{jt} = 5.15 + 1.48(BVPS_{jt}) + 5.26(AER2_{jt})$

- Transportation (n=7,762; Adj $R^2 = 0.60$)

  $PRICE_{jt} = 4.08 + 1.02(BVPS_{jt}) + 6.49(AER2_{jt})$

- Technology (n=54,543; Adj $R^2 = 0.32$)

  $PRICE_{jt} = 8.86 + 1.16(BVPS_{jt}) + 8.01(AER2_{jt})$

- Basic Industries (n=22,534; Adj $R^2 = 0.56$)

  $PRICE_{jt} = 4.47 + 1.13(BVPS_{jt}) + 6.20(AER2_{jt})$

- Capital Goods (n=30,588; Adj $R^2 = 0.59$)

  $PRICE_{jt} = 3.79 + 1.18(BVPS_{jt}) + 7.47(AER2_{jt})$

- Public Utilities (n=20,340; Adj $R^2 = 0.48$)

  $PRICE_{jt} = 6.72 + 1.03(BVPS_{jt}) + 5.97(AER2_{jt})$